BIOGRAPHICAL SKETCH

NAME Teruel, Mary N.	POSITION TITLE Assistant Professor of Chemical & Systems Biology
eRA COMMONS USER NAME (credential, e.g., agency login) MTERUEL	

EDUCATION/TRAINING

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	MM/YY	FIELD OF STUDY
University of Pennsylvania, Philadelphia,PA	B.S.	1985	Mechanical Engineering
Stanford University, Stanford, CA	M.S.	1989	Aeronautical Engineering
Stanford University, Stanford, CA	Ph.D.	1996	Aeronautical Engineering
Duke University, Durham, NC	Postdoctoral	1998-2000	Cell Biology

A. Personal Statement

I have been working at the interface of engineering, medicine, and biology for over 15 years designing, building, and implementing new technology and analysis tools to understand cell signaling principles. My research group has successfully developed and applied molecular tools such as large-scale siRNA libraries, single-cell imaging, as well as robust targeted mass spectrometry methodology and analysis tools, to monitor and understand perturbation-induced changes in the protein networks controlling differentiation and other functions of adipocytes. With my experience of combining novel engineering technology and analysis tools with biology, I am particularly well-suited to carry out interdisciplinary projects in obesity, metabolism, and cardiovascular disease that requires proven technical expertise, as well as a deep knowledge of the biology and clinical applications.

B. Positions and Honors

Positions and Employment

1985 - 1986	Helicopter Structural Test Engineer, Kaman Aerospace Corporation, Bloomfield, CT.
1986 - 1987	Test Engineer, Kronos Incorporated, Waltham, MA.
1988	Research Assistant with Prof. Peter Banks, Dept. of Electrical Engineering, Stanford University. Shuttle Electrodynamic Tether System Project.
1988 - 1989	Research Assistant with Prof. Robert MacCormack, Dept. of Aeronautics & Astronautics, Stanford University. Computation of Hypersonic Duct Flow.
1989 - 1995	Research Assistant with Prof. John Eaton, NASA Ames Research Center and the Dept of Mechanical Engineering, Thermosciences Division, Stanford University.
1995 -1998	Microscopy Engineer, Dept. of Cell Biology, Duke University, Durham, NC.
1998 - 2000	Postdoctoral Fellow, Dept. of Cell Biology, Duke University, Durham, NC.

2001 - 2005	Microscopy, Imaging, and Analysis Consultant for the Alliance for Cellular Signaling.
2001 - 2009	Senior Research Scientist, Dept. of Molecular Pharmacology, Stanford University.
2007 - 2009	Visiting Scientist with Professor Ruedi Aebersold, Institute for Molecular Systems Biology, ETH Zürich, Zürich, Switzerland.
2009 - 2011	Group Leader, Dept. of Chemical and Systems Biology, Stanford University.
October 2011-	Assistant Professor (tenure-track), Dept. of Chemical and Systems Biology, Stanford University, Stanford, CA.

Honors

1989 - 1993	National Air and Space Administration (NASA) Graduate Student Fellowship
1998 - 2001	National Institutes of Health Postdoctoral Fellowship
2000 - 2006	National Institutes of Health (NGHRI) Quantitative Mentored Career Development Award
2007	Biochemical Journal Young Investigator Award

C. Selected Peer-Reviewed Publications

1. **Teruel MN**. An Experimental and Computational Study of the Flow in the Endwall Region of a Turbine Cascade Passage. Ph.D. Thesis, Dept. of Aeronautics and Astronautics, and Thermosciences Division Report No. MD-74, Dept. of Mechanical Engineering, Stanford University.
2. **Teruel MN**, Meyer T. Electroporation-induced Formation of Individual Calcium Entry Sites in the Cell Body and Filipodia of Adherent Cells. ***Biophys J.*** 1997 Oct;73(4):1785-96. PMCID:PMC1181079.
3. Oancea E, **Teruel MN**, Quest AF, Meyer T. GFP-tagged cysteine-rich domains from Protein Kinase C as fluorescent indicators for diacylglycerol signaling in living cells. ***J Cell Biol*****.** 1998 Feb 9;140(3):485-98. PMCID:PMC2140171.
4. Shen K, **Teruel MN**, Subramanian K, Meyer T. CaMKIIbeta functions as an F-actin targeting module that localizes CaMKIIalpha/beta heterooligomers to dendritic spines. ***Neuron*** 1998 Sep;21(3):593-606. PMID:9768845.
5. **Teruel MN**, Blanpied TA, Shen K, Augustine GJ, Meyer T. A versatile microporation technique for the transfection of CNS neurons. ***J. Neuroscience Method****s* 93: 37-48. PMID:10598863.
6. **Teruel MN**, Chen W, Persechini A, Meyer T. Differential codes for free Ca2+-calmodulin signals in nucleus and cytosol. ***Curr Biol*****.** 2000 Jan 27;10(2):86-94. PMID:10662666.
7. Shen K, **Teruel MN**, Connor JH, Shenolikar S, Meyer T. Molecular memory by reversible translocation of calcium/calmodulin-dependent protein kinase II. ***Nat Neurosci*****.** 2000 Sep;3(9):881-6. PMID:10966618
8. **Teruel MN**, Meyer T.Translocation and reversible localization of signaling proteins: a dynamic future for signal transduction. ***Cell*** 2000 Oct 13;103(2):181-4. PMID:11057890.
9. Haugh JM, Codazzi F, **Teruel MN**, Meyer T. Spatial Sensing in Fibroblasts Mediated by 3' Phosphoinositides. ***J Cell Biol*****.** 2000 Dec 11;151(6):1269-80. PMCID:PMC2190602.
10. Botelho RJ, **Teruel MN**, Dierckman R, Anderson R, Wells A, York JD, Meyer T, Grinstein S. Localized Biphasic Chanes in Phosphatidylinositol-4,5-Bisphosphate at Sites of Phagocytosis. ***J Cell Biol.*** 2000 Dec 25;151(7):1353-68. PMCID:PMC2150667.
11. Codazzi F, **Teruel MN**, Meyer T. Control of Astrocyte Ca2+ Oscillations and Waves by Oscillating Translocation and Activation of Protein Kinase C. ***Curr Biol*****.** 2001 Jul 24;11(14):1089-97. PMID:11509231

12. **Teruel MN**, Meyer T. Parallel Single Cell Monitoring of Receptor-Triggered Membrane Translocation of a Calcium Sensing Protein Module. ***Science*****.** 2002 Mar 8;295(5561):1910-2. Awarded an "Editors' Choice" rating by the Science Magazine signaling editors. PMID:11884760
13. Tengholm A, **Teruel MN**, Meyer T. Single cell imaging of PI3-kinase activity and glucose transporter insertion into the plasma membrane by dual color evanescent wave microscopy. ***Sci STKE*****.** 2003 Feb 11;2003(169):PL4. PMID:12582202.
14. Meyer T, **Teruel MN**. Fluorescence imaging of signaling networks. ***Trends Cell Biol.*** 2003 Feb;13(2):101-6. PMID:12559761
15. Sano H, Eguez L, **Teruel MN**, Fukuda M, Chuang TD, Chavez JA, Lienhard GE, McGraw TE. Rab10, a target of the AS160 Rab GAP, is required for insulin-stimulated translocation of GLUT4 to the adipocyte plasma membrane. ***Cell Metabolism*** 2007 Apr;5(4):293-303. PMID:17403373.
16. Galvez T, **Teruel MN**, Heo WD, Jones JT, Kim ML, Liou J, Myers JW, Meyer T. An siRNA screen of the signaling proteome identifies the PI3K-mTOR signaling pathway as a regulator of transferrin uptake. ***Genome Biol.*** 2007;8(7):R142. PMCID:PMC2323231.
17. Park WS, Heo WD, Whalen JH, O'Rourke NA, Bryan HM, Meyer T, **Teruel MN**. Identification of PIP3-regulated Proteomes from C.elegans to human by Model Prediction and Live Imaging. ***Molecular Cell*** 2008 May 9;30(3):381-92. PMID:18471983
18. Hillman RT, Feng BY, Ni J, Woo WM, Milenkovic L, Hayden Gephart MG, **Teruel MN**, Oro AE, Chen JK, Scott MP. Neuropilins are positive regulators of Hedgehog signal transduction. ***Genes Dev.*** 2011 Nov 15;25(22):2333-46. doi: 10.1101/gad.173054.111. Epub 2011 Nov 3. PMCID:PMC3222900.
19. Abell E, Ahrends R, Bandara S, Park BO, **Teruel MN**. Parallel adaptive feedback enhances reliability of the Ca2+ signaling system. ***Proc Natl Acad Sci U S A****.* 2011 Aug 30;108(35):14485-90. Epub 2011 Aug 15. *Awarded a "Must Read" and "Exceptional" rating by the Faculty of 1000*.
20. Park BO, Ahrends RA, **Teruel MN**. Consecutive positive feedback loops create a bistable switch that controls preadipocyte to adipocyte conversion. ***Cell Reports*** 2012 Oct 25. PMID: 23063366
21. Ahrends, R., Park, B.O., Kovary, K., Ota, A., Abell, E., **Teruel MN**. Parallel quantitative proteomics reveals a multi-feedback system design for terminal differentiation. (*submitted*).
22. Ota, A., Ahrends, R. Kovary, K., Shen, W., Kraemer, F.B., **Teruel, MN.** A targeted proteomics approach to quantitatively compare nuclear protein profiles in adipose tissue depots from mouse models of insulin resistance. *(manuscript in preparation)*

SELECTED INVITED LECTURES

November 2012	EMBL Symposium: From Functional Genomics to Systems Biology, Heidelberg, Germany.
November 2012	Uppsala University, Department of Medical Cell Biology, Uppsala, Sweden.
July 2012	Kern Lipid Conference on Systems Biology, Lipidomics and Cardiometabolic Diseases, Aspen, CO.
March 2012	U.S. Human Proteome Organization (HUPO) Annual Meeting, San Francisco, CA.
February 2012	Stanford Regenerative Medicine Seminar, Stanford, CA.
Sept. 2011	Stanford University Mass Spectrometry Users Annual Meeting, Stanford, CA.
Sept. 2011	Obesity Summit, Stanford University, Stanford, CA.
August 2011	U.C. Berkeley, Dept. of Nutritional Science and Toxicology, Berekley. CA.
March 2011	U.S. Human Proteome Organization (HUPO) Annual Meeting, Raleigh, NC.
February 2011	Stanford University Dept. of Endocrinology, Stanford, CA.

June 2010	FASEB Summer Research Conference on Calcium and Cell Function, Steamboat Springs, CO.
May 2010	American Society of Mass Spectrometry Annual Meeting, Salt Lake City, Utah.
April 2010	American Society of Biochemistry and Molecular Biology (ASBMB) Annual Meeting, Anaheim, CA.
April 2010	Stanford University Cardiovascular Institute Symposium, Stanford, CA.
June 2008	Frontiers in Membrane Biology Symposium, Kobe, Japan.
April 2008	Duke University, Dept. of Pharmacology, Durham, NC.
April 2008	Max Planck Institute for Biochemistry, Martinsreid, Germany
March 2008	University of Pennsylvania, Dept. of Bioengineering, Philadelphia, PA.
February 2008	UCLA Dept. of Physiological Sciences, Los Angeles, CA.
November 2007	Janelia Farm Research Conference on Phosphoinositides, Howard Hughes Medical Institute, Ashburn, VA.
September 2007	Institute of Molecular Systems Biology, ETH Zürich, Switzerland.
August 2007	FASEB Conference on Glucose Transporters, Snowmass, CO.

SERVICE TO THE PROFESSION

March 2012	Program Review of the UCLA Department of Molecular and Medical Pharmacology (27 primary faculty, 62 graduate students). Carried out at the request of the UCLA Academic Senate.
March 2012	NIH Study Section on Fellowships in Chemistry, Biochemistry, Biophysics, and Bioengineering
June 2011	NIH Study Section on Cell, Molecular, and Computational Biology
February 2007	NIH Study Section on Microscopy and Imaging
March 2006	NIH Study Section on Microscopy and Imaging
November 2002	NCI Study Section: Innovative Technologies for the Molecular Analysis of Cancer National Cancer Institute

SELECTED TEACHING EXPERIENCE

Winters 2010-2013	Lecturer in Stanford University Graduate Student Course: ***Cell Signaling (CSB 210)***
Fall 2011	Course Director of the 10-week Stanford University Graduate Student Course: ***Current Topics in Proteomics (CSB 230)***
Spring 2003	Course Director of the 10-week Stanford University Graduate Student Course: ***Imaging and Biological Light Microscopy***
September 2000	Faculty member for the 10-day EMBO Course on ***GFP and Advanced Microscopy in Cell Biology***, Max Planck Institute, Goettingen, Germany.